

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Paul A. Farrar  
Title: H2 Plasma Treatment

Docket No.: 1303.110US1  
Filed: August 5, 2003  
Examiner: Unknown

Serial No.: 10/634274  
Due Date: N/A  
Group Art Unit: 2818

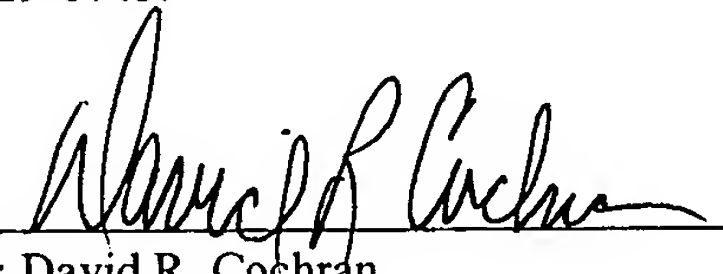
**Mail Stop Amendment**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

We are transmitting herewith the following attached items (as indicated with an "X"):

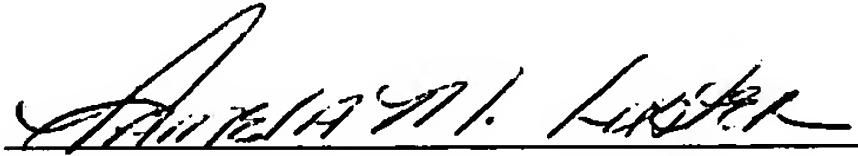
- ☒ A return postcard.
- ☒ A Communication Concerning Related Applications (2 pgs.).
- ☒ An Information Disclosure Statement (2 pgs.), Form 1449 (12 pgs.), and copies of 91 cited documents.

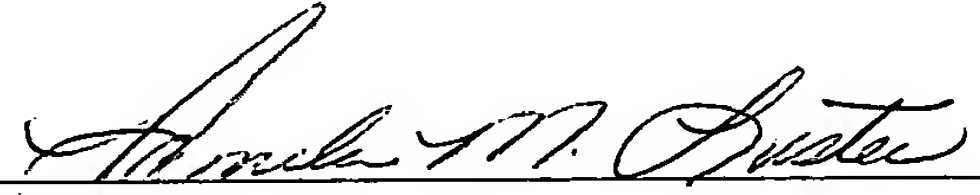
Please consider this a **PETITION FOR EXTENSION OF TIME** for sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
Customer Number 21186

By:   
Atty: David R. Cochran  
Reg. No. 46,632

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 11 day of May, 2004.

  
Name

  
Signature

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
(GENERAL)



S/N/10/634274

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Paul A. Farrar  
Serial No.: 10/634274  
Filed: August 05, 2003  
Title: H2 Plasma Treatment

Examiner: Unknown  
Group Art Unit: 2818  
Docket: 1303.110US1

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicant respectfully requests that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicant requests that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicant with the next official communication.

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Information Disclosure Statement considered.

INFORMATION DISCLOSURE STATEMENT

Serial No :10/634274  
Filing Date: August 05, 2003  
Title: H2 Plasma Treatment

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Dkt: 1303.110US1

The Examiner is invited to contact the Applicant's Representative at the below-listed telephone number if there are any questions regarding this communication.

The present application is either a U.S. national patent application filed after June 30, 2003 or an international application that entered the national stage under 35 U.S.C. § 371 after June 30, 2003. Thus, Applicant believes that the U.S. Patent & Trademark Office has waived the requirement under 37 C.F.R. 1.98 (a)(2)(i) for submitting a copy of each cited U.S. patent and each U.S. patent application publication. The waiver is provided in a pre-OG notice from the U.S. Patent & Trademark Office entitled "Information Disclosure Statements May Be Filed Without Copies of U.S. Patents and Published Applications in Patent Applications filed after June 30, 2003" and dated July 11, 2003. Applicant acknowledges the requirement to submit copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).

Respectfully submitted,

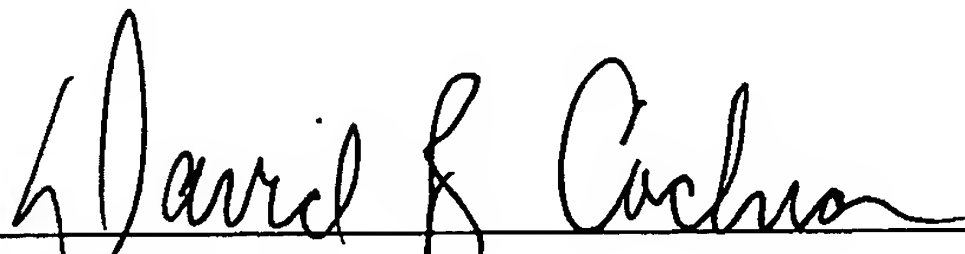
PAUL A. FARRAR

By his Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
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Minneapolis, MN 55402  
(612) 371-2157

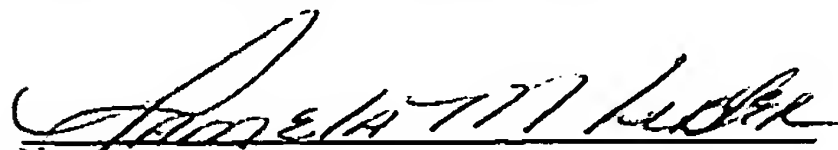
Date 11 May 2004

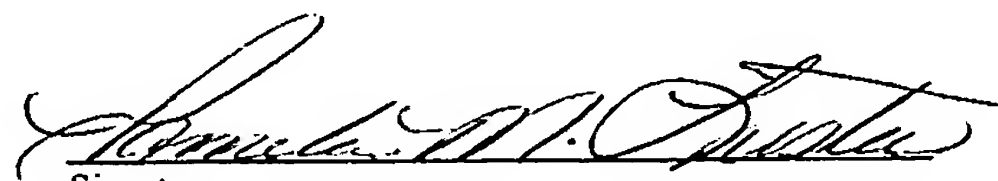
By



David R. Cochran  
Reg. No. 46,632

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Name

  
Signature



S/N 10/634274

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant:	Paul A. Farrar	Examiner:	Unknown
Serial No.:	10/634274	Group Art Unit:	2818
Filed:	August 5, 2003	Docket:	1303.110US1
Title:	H2 PLASMA TREATMENT		

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**COMMUNICATION CONCERNING RELATED APPLICATION(S)**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Applicant would like to bring to the Examiner's attention the following related application(s) in the above-identified patent application:

<u>Serial/Patent No.</u>	<u>Filing Date</u>	<u>Attorney Docket</u>	<u>Title</u>
09/48,3869 6,420,262	January 18, 2000	303.664US1	STRUCTURES AND METHODS TO ENHANCE COPPER METALLIZATION
09/484,002 6,376,370	January 18, 2000	303.673US1	PROCESS FOR PROVIDING SEED LAYERS FOR USING ALUMINUM, COPPER, GOLD AND SILVER METALLURGY
10/117,041	April 5, 2002	303.673US2	INTEGRATED CIRCUIT AND SEED LAYERS
10/196,078	July 16, 2002	303.664US2	STRUCTURES AND METHODS TO ENHANCE COPPER METALLIZATION
10/196,081	July 16, 2002	303.664US3	STRUCTURES AND METHODS TO ENHANCE COPPER METALLIZATION
09/534,224 6,426,289	March 24, 2000		External Matter

COMMUNICATION CONCERNING RELATED APPLICATIONS

Serial Number: 10/634274

Filing Date: August 5, 2003

Title: H2 PLASMA TREATMENT

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Dkt: 1303.110US1

10/137,293	May 3, 2002		External Matter
08/892,114 6,077,792	July 14, 1997		External Matter
09/480,290	January 10, 2000		External Matter
10/789,882	February 27, 2004	303.673US3	INTEGRATED CIRCUIT AND SEED LAYERS
10/195,965	July 16, 2002	303.664US4	STRUCTURES AND METHODS TO ENHANCE COPPER METALLIZATION

Respectfully submitted,

PAUL A. FARRAR

By Applicant's Representatives,

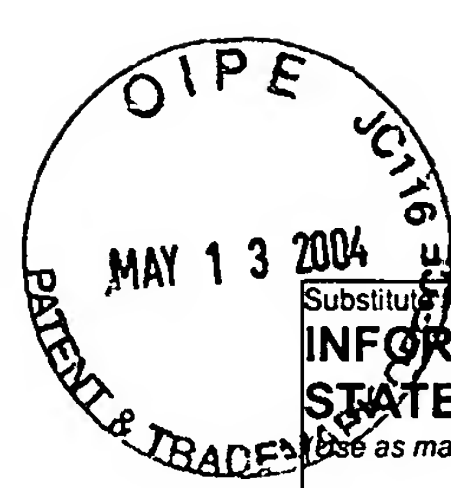
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402  
(612) 371-2157

Date 11 May 2004 By David R. Cochran  
David R. Cochran  
Reg. No. 46,632

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Samela M. Luster  
Name

Samela M. Luster  
Signature



Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

**Application Number** 10/634274**Filing Date** August 5, 2003**First Named Inventor** Farrar, Paul**Group Art Unit** 2818**Examiner Name** Unknown

Sheet 1 of 12

**Attorney Docket No:** 1303.110US1**US PATENT DOCUMENTS**

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date If Appropriate
	01/0002333	05/31/2001	Huang, Chao-Yuan, et al.	438	637	03/29/1999
	2002/0014646	02/07/2002	Tsu, Robert , et al.	257	296	07/30/2001
	2002/0028552	03/07/2002	Lee, Ki-Young , et al.	438	243	09/03/1999
	2002/0096768	07/25/2002	Joshi, Rajiv V.	257	750	01/18/2002
	2002/0109233	08/15/2002	Farrar, Paul A.	257	762	04/05/2002
	US-2,842,438	07/08/1958	Saarivirta, M. J., et al.	75	153	08/02/1956
	US-3,954,570	06/04/1976	Shirk, Albert , et al.	204	15	11/11/1974
	US-4,386,116	05/31/1983	Nair, Krishna K., et al.	427	99	12/24/1981
	US-4,394,223	07/19/1983	Hall, Dean	204	15	10/06/1981
	US-4,423,547	01/03/1984	Farrar, P. A., et al.	29	571	06/01/1981
	US-4,565,157	01/21/1986	Brors, D. L., et al.	118	719	03/29/1983
	US-4,574,095	03/04/1986	Baum, Thomas H., et al.	427	53.1	11/19/1984
	US-4,762,728	08/09/1988	Keyser, T. , et al.	427	38	11/26/1985
	US-4,788,082	11/29/1988	Schmitt, Jerome J.	427	248.1	12/12/1985
	US-4,847,111	07/11/1989	Chow, Yu C., et al.	427	38	06/30/1988
	US-4,931,410	06/05/1990	Tokunaga, Takafumi , et al.	437	189	08/25/1988
	US-4,948,459	08/14/1990	Van Laarhoven, et al.	156	643	01/04/1989
	US-4,962,058	10/09/1990	Cronin, John E., et al.	437	187	04/14/1989
	US-4,996,584	02/26/1991	Young, P. L., et al.	357	71	10/13/1988
	US-5,019,531	05/28/1991	Awaya, N. , et al.	437	180	05/19/1989
	US-5,034,799	07/23/1991	Tomita, K. , et al.	357	71	02/14/1990
	US-5,084,412	01/28/1992	Nakasaka, Yasushi	437	189	10/01/1990
	US-5,100,499	03/31/1992	Douglas, M. A.	156	635	06/25/1991
	US-5,130,274	07/14/1992	Harper, J. M., et al.	437	195	04/05/1991
	US-5,149,615	09/22/1992	Chakravorty, K. K., et al.	430	313	01/08/1991
	US-5,158,986	10/27/1992	Cha, S. W., et al.	521	82	04/05/1991
	US-5,173,442	12/22/1992	Carey, D. H.	437	173	03/24/1992
	US-5,231,056	07/27/1993	Sandhu, G. S.	437	200	01/15/1992
	US-5,240,878	08/31/1993	Fitzsimmons, J., et al.	437	187	04/26/1991
	US-5,243,222	09/07/1993	Harper, J. M., et al.	257	774	01/08/1992
	US-5,256,205	10/26/1993	Schmitt III, Jerome J., et al.	118	723	01/07/1992
	US-5,334,356	08/02/1994	Baldwin, D. F., et al.	422	133	08/24/1992
	US-5,354,712	10/11/1994	Ho, Y. Q., et al.	437	195	11/12/1992

**EXAMINER****DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached



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Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)	Complete if Known	
	<b>Application Number</b>	10/634274
	<b>Filing Date</b>	August 5, 2003
	<b>First Named Inventor</b>	Farrar, Paul
	<b>Group Art Unit</b>	2818
	<b>Examiner Name</b>	Unknown
Sheet 2 of 12	Attorney Docket No: 1303.110US1	

	US-5,371,042	12/06/1994	Ong, E.	437	194	06/16/1992
	US-5,384,284	01/24/1995	Doan, T T., et al.	437	190	10/01/1993
	US-5,413,687	05/09/1995	Barton, C. L., et al.	204	192.14	11/27/1991
	US-5,426,330	06/20/1995	Joshi, R. V., et al.	257	752	09/21/1993
	US-5,442,237	08/15/1995	Hughes, Henry G., et al.	257	759	02/04/1994
	US-5,447,887	09/05/1995	Filipiak, Stanley, et al.	437	200	04/01/1994
	US-5,461,243	10/24/1995	Ek, Bruce A., et al.	257	190	10/29/1993
	US-5,470,789	11/28/1995	Misawa, N.	437	190	03/07/1995
	US-5,470,801	11/28/1995	Kapoor, Ashok K., et al.	437	238	06/28/1993
	US-5,476,817	12/19/1995	Numata, K.	437	195	05/31/1994
	US-5,495,667	03/05/1996	Farnworth, Warren M., et al.	29	843	11/07/1994
	US-5,506,449	04/09/1996	Nakano, Tadashi, et al.	257	758	03/23/1994
	US-5,529,956	06/25/1996	Morishita, Y.	437	195	09/28/1994
	US-5,538,922	07/23/1996	Cooper, K J., et al.	437	195	01/25/1995
	US-5,539,060	07/23/1996	Tsunogae, Y., et al.	525	338	10/13/1995
	US-5,595,937	01/21/1997	Mikagi, K.	437	192	04/12/1996
	US-5,609,721	03/11/1997	Tsukune, A, et al.	156	646.1	01/03/1995
	US-5,625,232	04/29/1997	Numata, K., et al.	257	758	07/15/1994
	US-5,635,253	06/03/1997	Canaperi, Donald F., et al.	427	437	06/07/1995
	US-5,654,245	08/05/1997	Allen, Gregory L.	438	629	03/23/1993
	US-5,662,788	09/02/1997	Sandhu, G., et al.	205	87	06/03/1996
	US-5,670,420	09/23/1997	Choi, Kyeong K.	437	189	11/08/1995
	US-5,674,787	10/07/1997	Zhao, Bin, et al.	437	230	01/16/1996
	US-5,675,187	10/07/1997	Numata, K., et al.	257	758	05/16/1996
	US-5,679,608	10/21/1997	Cheung, Robin W., et al.	437	195	06/05/1995
	US-5,681,441	10/28/1997	Svendsen, Leo G., et al.	205	114	12/22/1992
	US-5,695,810	12/09/1997	Dubin, Valery M., et al.	427	96	11/20/1996
	US-5,719,089	02/17/1998	Cherng, Meng-Jaw, et al.	438	637	06/21/1996
	US-5,719,410	02/17/1998	Suehiro, Shintaro, et al.	257	77	12/16/1996
	US-5,739,579	04/14/1998	Chiang, Chien, et al.	257	635	09/10/1996
	US-5,763,953	06/09/1998	Iijima, T., et al.	257	762	01/18/1996
	US-5,780,358	07/14/1998	Zhou, M. S.	438	645	04/08/1996
	US-5,785,570	07/28/1998	Bruni, M. D.	445	52	07/25/1995

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

**Application Number** 10/634274**Filing Date** August 5, 2003**First Named Inventor** Farrar, Paul**Group Art Unit** 2818**Examiner Name** Unknown

Sheet 3 of 12

**Attorney Docket No:** 1303.110US1

	US-5,792,522	08/11/1998	Jin, S. , et al.	427	575	09/18/1996
	US-5,801,098	09/01/1998	Fiordalice, R. , et al.	438	653	09/03/1996
	US-5,814,557	09/29/1998	Venkatraman, Ramnath , et al.	438	622	05/20/1996
	US-5,821,168	10/13/1998	Jain, Ajay	438	692	07/16/1997
	US-5,824,599	10/20/1998	Schacham-Diamond, Yosef , et al.	438	678	01/16/1996
	US-5,858,877	01/12/1999	Dennison, C. H., et al.	438	700	01/21/1997
	US-5,891,797	04/06/1999	Farrar, P. A.	438	619	10/20/1997
	US-5,891,804	04/06/1999	Havemann, R. H., et al.	438	674	04/14/1997
	US-5,893,752	04/13/1999	Zhang, J. , et al.	438	687	12/22/1997
	US-5,895,740	04/20/1999	Chien, Rong-Wu, et al.	430	313	11/13/1996
	US-5,897,370	04/27/1999	Joshi, R. V., et al.	438	632	10/28/1996
	US-5,907,772	05/25/1999	Iwasaki, Haruo	438	253	02/26/1997
	US-5,911,113	06/08/1999	Yao, G. , et al.	438	649	03/18/1997
	US-5,913,147	06/15/1999	Dubin, Valery , et al.	438	687	01/21/1997
	US-5,925,930	07/20/1999	Farnworth, Warren M., et al.	257	737	05/21/1996
	US-5,930,669	07/27/1999	Uzoh, Cyprian	438	627	04/03/1997
	US-5,932,928	08/03/1999	Clampitt, D. A.	257	758	07/03/1997
	US-5,933,758	08/03/1999	Jain, A.	438	687	05/12/1997
	US-5,940,733	08/17/1999	Beinglass, Israel, et al.	438	655	07/29/1997
	US-5,948,467	09/07/1999	Nguyen, T. , et al.	427	99	07/24/1998
	US-5,962,923	10/05/1999	Xu, Z. , et al.	257	774	08/07/1995
	US-5,968,333	10/19/1999	Nogami, T. , et al.	205	184	04/07/1998
	US-5,969,422	10/19/1999	Ting, C. , et al.	257	762	05/15/1997
	US-5,972,179	10/26/1999	Chittipeddi, , et al.	204	192.17	09/30/1997
	US-5,972,804	10/26/1999	Tobin, Philip J., et al.	438	786	11/03/1997
	US-5,976,710	11/02/1999	Sachdev, K. G., et al.	428	620	04/10/1997
	US-5,981,350	11/09/1999	Geusic, Joseph E., et al.	438	386	05/29/1998
	US-5,985,759	11/16/1999	Kim, E. , et al.	438	653	02/24/1998
	US-5,989,623	11/23/1999	Chen, Liang-Yuh, et al.	427	97	08/19/1997
	US-5,994,777	11/30/1999	Farrar, P. A.	257	758	08/26/1998
	US-6,001,730	12/14/1999	Farkas, J. , et al.	438	627	10/20/1997
	US-6,008,117	12/28/1999	Hong, Qi-Zhong , et al.	438	629	03/19/1997
	US-6,015,465	01/18/2000	Kholodenko, A., et al.	118	719	04/08/1998
	US-6,017,820	01/25/2000	Ting, C. H., et al.	438	689	07/17/1998

**EXAMINER****DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached



Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>	Complete if Known <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;"><b>Application Number</b></td> <td>10/634274</td> </tr> <tr> <td><b>Filing Date</b></td> <td>August 5, 2003</td> </tr> <tr> <td><b>First Named Inventor</b></td> <td>Farrar, Paul</td> </tr> <tr> <td><b>Group Art Unit</b></td> <td>2818</td> </tr> <tr> <td><b>Examiner Name</b></td> <td>Unknown</td> </tr> </table>	<b>Application Number</b>	10/634274	<b>Filing Date</b>	August 5, 2003	<b>First Named Inventor</b>	Farrar, Paul	<b>Group Art Unit</b>	2818	<b>Examiner Name</b>	Unknown
<b>Application Number</b>	10/634274										
<b>Filing Date</b>	August 5, 2003										
<b>First Named Inventor</b>	Farrar, Paul										
<b>Group Art Unit</b>	2818										
<b>Examiner Name</b>	Unknown										
Sheet 4 of 12	Attorney Docket No: 1303.110US1										

	US-6,030,877	02/29/2000	Lee, C , et al.	438	381	10/06/1997
	US-6,037,248	03/14/2000	Ahn, Kie	438	619	06/13/1997
	US-6,054,172	04/25/2000	Robinson, K. , et al.	427	97	02/25/1999
	US-6,065,424	05/23/2000	Shacham-Diamand, Y. , et al.	118	696	12/18/1996
	US-6,069,068	05/30/2000	Rathore, H. S., et al.	438	628	10/08/1997
	US-6,071,810	06/06/2000	Wada, Junichi , et al.	438	635	12/23/1997
	US-6,077,792	06/20/2000	Farrar, Paul A.	438	780	07/14/1997
	US-6,100,193	08/08/2000	Suehiro, Shintaro, et al.	438	685	09/24/1997
	US-6,120,641	10/19/2000	Stevens, E. Henry , et al.	156	345.22	08/03/1998
	US-6,126,989	10/03/2000	Robinson, Karl , et al.	427	97	08/26/1998
	US-6,136,095	10/24/2000	Xu, Z. , et al.	118	719	10/06/1997
	US-6,139,699	10/31/2000	Chiang, T. , et al.	204	192.15	05/27/1997
	US-6,140,228	10/31/2000	Shan, E. , et al.	438	653	11/13/1997
	US-6,140,234	10/31/2000	Uzoh, Cyprian , et al.	438	678	01/20/1998
	US-6,143,646	11/07/2000	Wetzel, J. T.	438	637	06/03/1997
	US-6,150,261	11/21/2000	Hsu, C. , et al.	438	640	05/25/1999
	US-6,153,507	11/28/2000	Mikagi, K.	438	618	01/13/1998
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**Application Number** 10/634274**Filing Date** August 5, 2003**First Named Inventor** Farrar, Paul**Group Art Unit** 2818**Examiner Name** Unknown

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	Application Number	10/634274
	Filing Date	August 5, 2003
	First Named Inventor	Farrar, Paul
	Group Art Unit	2818
	Examiner Name	Unknown
Sheet 11 of 12	Attorney Docket No: 1303.110US1	

## OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		SHACHAM-DIAMAND, YOSI , et al., "Copper electroless deposition technology for ultra-large-scale-intergration (ULSI) metallization", <u>Microelectronic Engineering</u> , NL, Vol. 33, No. 1, XP004054497, (1997),47-58	
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